

Patent

**SURGICAL INSTRUMENTS AND TECHNIQUES FOR
TREATING GASTRO-ESOPHAGEAL REFLUX DISEASE**

Related Applications

- 5 This application is a divisional of copending
U.S. Application Serial No. 09/222,501, filed December
29, 1998, ^{now U.S. Pat. No. 6,740,082,} which claims the benefit of provisional U.S.
Application Serial No. 60/086,068, filed May 20, 1998,
and entitled "Surgical Instruments and Techniques for
Treating Gastro-Esophageal Reflux Disease."

10 **Field of the Invention**

- This invention relates to instruments and
techniques for thermally-mediated therapies of targeted
tissue volumes in a patient's LES (lower esophageal
sphincter) to treat gastro-esophageal reflux disease
15 (GERD) in a minimally invasive manner. The thermally-
mediated treatment, in a low temperature range,
selectively injures cells and proteins within the (LES)
to induce a predictable wound healing response to
populate the targeted tissue with collagen matrices as a
20 means of altering the bio-mechanical characteristics of
the LES. In a slightly higher temperature range, an
alternative thermally-mediated treatment is used to
shrink native collagen fibers within the LES to "model"
the dimensions and laxity of the LES. The novel treatment
25 techniques are preferably performed with a trans-

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